



Preliminary results of a systematic review focusing on the effectiveness of the interventions in preventing the progression of frailty in older adults

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INTRODUCTION

- Frailty is an **age-related state of high vulnerability to adverse health outcomes** after a stressor event.
- Frailty predisposes the individuals to progressive decline in different functional domains (Figure 1) and contributes to the onset of geriatric syndromes (Clegg et al., 2013; Fried et al., 2004).

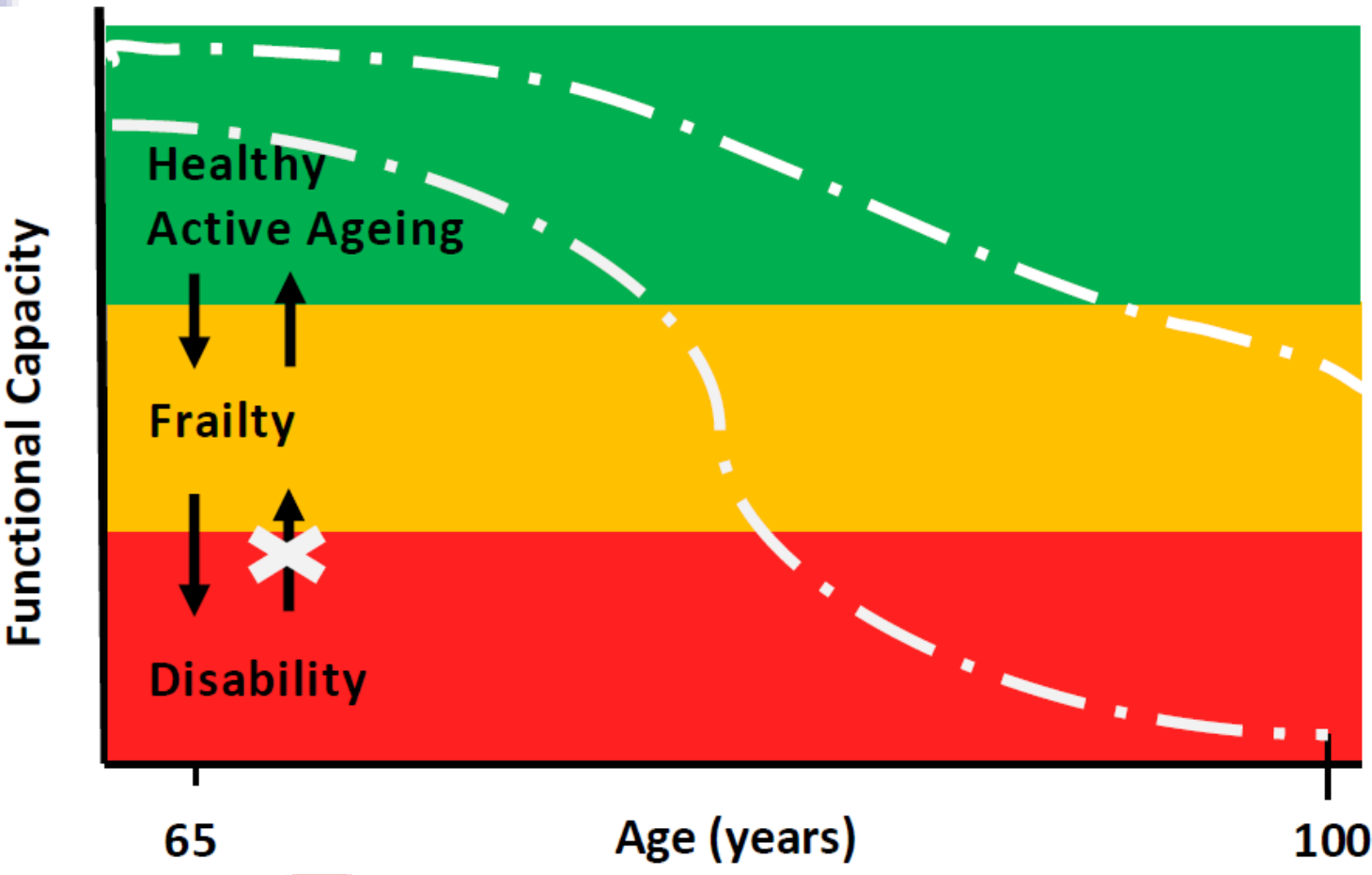


Figure 1. Trajectories of functional decline

- Various types of intervention in preventing the frailty progression have been proposed. However, there is no systematic review that critically analyzes the existing evidence.

OBJECTIVES

- Objective:** Summarize the best available evidence in relation to the effectiveness of the interventions in preventing progression of frailty in older adults.
- Specific questions:**
 - What is the effectiveness of interventions in preventing or reducing frailty in older adults, and how does it vary with degree of frailty?
 - Are there factors that influence the effectiveness of those interventions?
 - What is the economic feasibility of interventions for frailty?

METHODS

- The review process was based on Joanna Briggs Institute procedures (2014).

INCLUSION AND EXCLUSION CRITERIA

Inclusion criteria:

- Population:** Participants aged 65 and over, explicitly identified as pre-frail or frail and receiving health care and support services in any type of setting.
- Intervention:** Interventions focusing on the prevention of frailty progress.
- Comparator:** Usual care, alternative therapeutic interventions or no intervention
- Outcomes:** (i) **Frailty** indicated by any validated scale or measurement or index
(ii) **Clinical outcomes:** quality of life, activities of daily living, functional capacity, cognition, caregiver burden, drugs and prescriptions, analytical parameters, adverse outcomes, etc.
(iii) **Economic outcomes:** costs and/or costs relative to benefits and/or savings associated with implementing the interventions for frailty

Exclusion criteria: selection based on specific illness or on terminal diagnosis only

SEARCH STRATEGY

- Publication date:** from January 2001 to November 2015
- Languages:** English, Portuguese, Spanish, Italian, Dutch
- Databases for published studies:** CINAHL, MEDLINE, SCOPUS, EMBASE, Cochrane Central Register of Controlled Trials, Scielo
- Databases for unpublished studies:** ProQuest Theses and Dissertations, OpenGrey, Banco de teses de CAPES, Dissertations Abstracts Online (e-Thos)
- Keywords:** elder* OR old*; frail* OR pre-frail*; intervention* OR therap* OR treatment* OR program*; effec* OR efficacy

ASSESSMENT OF METHODOLOGICAL QUALITY

- Assessment tool:** Joanna Briggs Institute Critical Appraisal Checklists for (i) Experimental Studies, (ii) Comparable Cohort and Case Control, (iii) Descriptive and Case Series, (iv) Economic Evaluations
- Process:** Two reviewers assessed independently the selected papers. Any disagreements were resolved through discussion or with a third reviewer.
- Cut-off point for inclusion:** ≥ 5 affirmative responses on the appraisal checklist.

RESULTS

- 21 RCTs included** (Figure 2).
- Main methodological strengths:**
 - identical procedures used for outcomes assessment in control and intervention groups (100%)
 - use of statistical analysis (100%)
- Main methodological problems:**
 - lack of participant blinding (90%)
 - differences on the treatment of the intervention and control groups (62%)
 - lack of cultural adaptation of the assessment tools (57%)
- High variability on frailty definition** and on operationalization of frailty indicators was also observed.

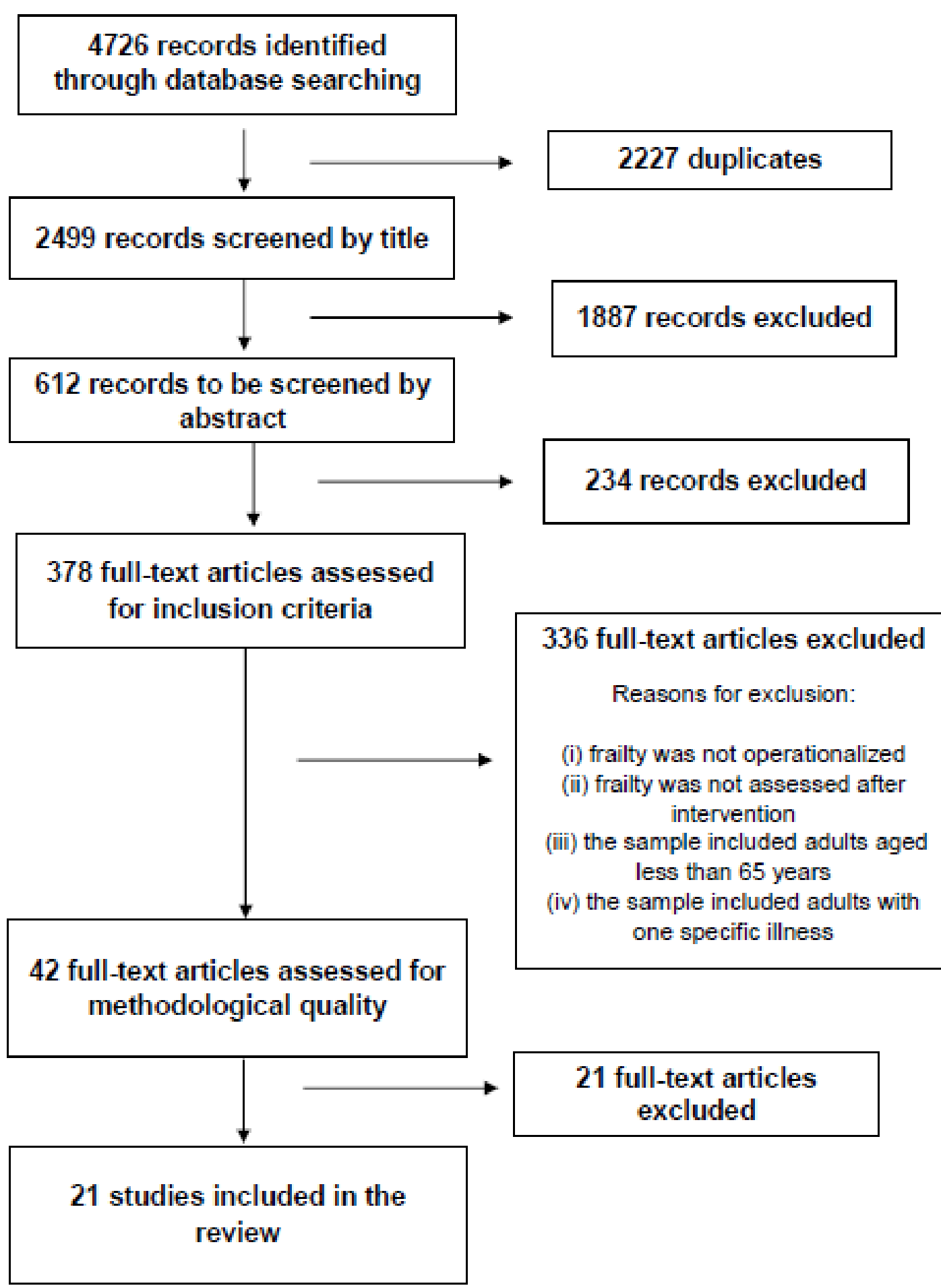


Figure 2. Flowchart for the search and selection process

Interventions described in the included studies:

exercise (n=7), supplementation (n=4), exercise and supplementation (n=2), multidisciplinary approach (n=5), home visits (n=4), group meetings (n=3), cognitive training (n=1), problem solving therapy (n=1), educational session with geriatrician (n=1)

FRAILITY

- Interventions reducing frailty or postponing its progression:** exercise programs conducted in group, exercise and supplementation, protein supplementation, cognitive training, educational session with geriatrician
- Inconsistent results:** group meetings, home visits and multidisciplinary approach.
- Lack of efficacy:** home-based exercise or exercise performed individually, hormone supplementation, problem solving therapy.

SECONDARY OUTCOMES

- Different interventions had different effects on secondary outcomes.
- The positive changes were most frequently observed for **functional capacity, mental health and analytical parameters**.
- The analyzed interventions were less beneficial for **cognition**.

CONCLUSIONS

- Further studies on the analyzed interventions are needed to consolidate the findings and make them more generalizable.
- There is also a need for more consistency on frailty operationalization to facilitate the dialogue between health care professionals, social care practitioners, researchers and policy-makers.

IMPLICATIONS

- It is expected that the optimization of frailty treatment will have **positive impact on care** for older adults, **minimizing the risk of adverse consequences** and **ameliorating the impact on independence or healthy and engaged lifestyles**. Other possible implications are related with better management of healthcare costs.

REFERENCES

- Clegg, A., Young, J., Iliffe, S., Rikkert, M. O., & Rockwood, K. (2013). Frailty in elderly people. *Lancet* 381(9868), 752-762.
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